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ABSTRACT

An ongoing study was initiated to provide a reliable means of defining and measuring factors affecting students' performance as they move from high school to college, including the reasons why some are more able than others to excel and/or persist. The study provides public high schools, colleges, universities and the Missouri Coordinating Board for Higher Education with high school characteristics information and college data for nearly 15,000 entering college freshmen. The data includes American College Testing Service (ACT) scores, high school and college grade point averages, major, nearly all of the high school characteristics shown to be related to college success, credit hours earned, and other data on student interests and demographics. In the first year of the study, the data consisted of ACT test scores, college or university, grade point averages, credit hours and stated majors. The first-year statistical analyses and reports sent to the participating institutions are described and illustrated, and a summary of the first-year results is provided. One of the primary first-year results was the finding that only 23.5% of the students had completed the core curriculum; when the foreign language requirement was excluded from consideration, this figure was 45.3%. The second-year methodology and some preliminary results are also discussed, and an overview is given of the methodological problems and considerations. The study is considered to be valuable for state coordination and policymaking, to the institutions involved, and as a bridge for communication among the players. Four selected reports of the data are appended. Contains 5 references. (KM)

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# THE MISSOURI STUDENT ACHIEVEMENT STUDY
## Results of the First Year

by

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Phoenix, Arizona

May 15 - 18, 1988

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This paper was presented at the Twenty-Eighth Annual Forum of the Association for Institutional Research held at the Hyatt Regency Phoenix Hotel, Phoenix, Arizona, May 15-18, 1988. This paper was reviewed by the AIR Forum Publications Committee and was judged to be of high quality and of interest to others concerned with the research of higher education. It has therefore been selected to be included in the ERIC Collection of Forum Papers.

Teresa Karolewski
Chair and Editor
Forum Publications Editorial
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## Introduction and History

The issues of college success and peristence have been the subject of concern, discussion, and research in higher education for many years. As early as 1956, Bragg found that attrition rates are similar for old and young students. In the early 1960's, Summerskill (1962) was among the first to find that high school GPA and high school class rank are among the best predictors of persistence and attrition. More recently, Astin (1975) found that, in his sample of students, high school GPA and class rank explained 70% of the total explained variance of college persistence. A college preparatory (core) program has also been shown to be a major factor in predicting persistence, as has degree level goal (Fetters, 1977). Also, as might be expected, college GPA and persistence are positively related, with the student making high grades more likely to remain in college than the student with poor grades (Astin, 1975).

Other researchers, such as Tinto (1975), have shown that, once enrolled in a college, factors such as the student's social integration significantly affect both the rate of persistence and college GPA. Other studies have verified such common sense truisms that good study habits and area of study are related to persistence. Several other factors, such as size and type of high school, religious affiliation, ethnic group, parental income and education, and expectations about college have also been shown to be related to persistence and/or college GPA.

In short, the factors which relate to college performance have been well-investigated. However, the focus of many of the studies has typically either been upon factors prior to entering college, or upon factors that play a role once a student has entered college. Those studies that have attempted to do both have often depended upon a small sample, or were based upon a "snapshot" of student behavior over a relatively short time period. Also, and perhaps most importantly for the needs of the Missouri Coordinating Board, none of the studies were based upon a large and current sample of students graduating from Missouri high schools and attending Missouri colleges and universities. The Board, therefore, initiated a study to provide a reliable means of defining and measuring those factors which affect students' performance as they move from high school to a college or university environment. The ability to collect this information on a regular basis should help to determine the reasons why some students are more able than others to excel and/or persist in a higher education environment. Moreover, the generation of these data could provide important information for the benefit of the institutions such as persistence and student migration among institutions.

To provide a means of obtaining such information, the Missouri Coordinating Board for Higher Education staff met in 1986 with the American College Testing Service (ACT) to discuss the feasibility of combining the ACT student profile data base with information collected from the public postsecondary institutions in the state. The outcome of the discussions has been the Student Achievement Study.

The study is unique in that it provides public high schools, public colleges and universities, and the Coordinating Board with both high

school characteristics information and college data for nearly 15,000 entering college freshmen. In addition to a student's ACT test scores and high school GPA, the ACT data base provides data on nearly all of those high school characteristics that have been indicated by the literature as related to college success and persistence. The data base also offers a wealth of other information, ranging from extracurricular activities to the size of a student's hometown. The data available from the postsecondary institutions include college GPA, credit hours earned, and student major.

## Methodology

In the first year of the study, the colleges and universities provided two data tapes to the Coordinating Board for Higher Education. The first tape contained the students' social security numbers only. These numbers were matched by ACT with their data base to determine the number of the ACT-tested entering freshmen and the college or university in which they enrolled. The second tape contained the students' GPAs and credit hours completed for the Fall 1986 semester, as well as their stated majors.

From this information, reports were provided to over 97 percent of the public and private high school districts in Missouri and to all of the public postsecondary institutions in the state. Upon receipt of the data tapes in the second year, a set of similar reports for 1987-88 college freshmen will be distributed to the high schools and colleges in Fall 1988.

As can be seen from in the appendix, the high school reports compare by college entered the high school GPAs, the ACT scores, and the first semester college GPA's of their recent graduates. They also compare the academic performance of those students that took a core curriculum with those that did not. This information is especially valuable in that it gives high school counselors an indication of how their students are performing at particular public colleges and universities. The college reports provide the same information, except the students are categorized by the high school from which they graduated. In addition, the information is categorized by student major. These reports are helpful to college admissions officers because they indicate how well students from various high schools are performing at their institution.

In addition to the reports sent to the institutions, a series of statistical reports were also generated. The purpose of the reports was to determine those factors that contribute to success in college. The variables used were those that the literature has indicated as related to college success. They include quantitative factors such as the ACT composite test score, the student's high school GPA, and whether or not the student has completed a core curriculum. Other variables include demographic factors, such as the student's race and the size of the student's hometown. Perhaps most interesting is the motivational and perceptive information that is available through the ACT profile. These include the student's certainty of choice of prospective major and vocation, the student's anticipated need for counseling in college, and

the students' pre-entry priority ranking of the college which he or she is attending. These reports, showing a variety of factors, were generated as a single statewide group, by institutional mission, and by individual institution.

## Results of the First Year

One of the more interesting results of the study is that, statewide, only 23.5% of the students in the first year cohort had completed the core curriculum, which was defined as at least four years of English, three years of mathematics, three years of social studies, two years of natural sciences, and two years of foreign languages. However, when the foreign language requirement was excluded as part of the core, 45.3% of the students had completed the balance of the core curriculum. It was also found that the mean Fall 86 semester GPA of those students that had taken the complete core curriculum was 2.66, while the mean GPA of those that had completed all but the foreign language requirement was a somewhat lower 2.59. This difference, while significant because of the large sample size, was not as large as anticipated.

The mean Fall 86 semester college GPA's of the students that had completed the entire core (2.66) and of those students that had completed all but the foreign language component (2.59) were both significantly higher ($p < .01$) than that of the students that had <u>not</u> completed a core curriculum (2.37).

As might be expected, the differences between the mean Fall 86 semester GPA's of students completing and not completing the high school core curriculum varied widely by institutional mission. The differences were greater at those systems and institutions that had research missions, or have historically attracted students with more academically rigorous backgrounds. In the community colleges, for example, the difference between the mean GPA's was only .12, both when considering the full core curriculum and the core curriculum with foreign languages excluded. Also, the number of community college students that had taken a full core curriculum in high school was only 16.3%, about seven percentage points lower than the state as a whole. The percentage of students completing all but the foreign language requirement was 35.8%, which was about ten percentage points less than the statewide average.

Review of the outcomes of the multiple regression analyses reveals that, while the results varied somewhat with institutional mission, in general, high school GPA was the best predictor for Fall 86 semester GPA. When considering the statewide cohort as a whole, the total variance explained by the high school GPA was 21.6%. The remaining eight variables that made a significant contribution to explaining the total variance contributed only an additional 5.66 percent. Thus, high school GPA accounted for 79.3% of the explained variance.

In the statewide model, whether or not a student took a core curriculum accounted for only .17% of the total variance. This leads to the interesting fact that, although a student's participation in the core curriculum contributes very little to the total variance of the Fall 86

semester college GPA, there is a significant difference between the mean GPA for those students who took the core curriculum and for those students that did not. While one might initially conclude that there might be a statistical problem related to this outcome, such as multicollinearity, collinearity diagnostics generated by Statistical Analysis System (SAS) showed that this was not a major problem.

We are anticipating that the relationship between GPA and whether or not a student has completed a core curriculum will strengthen as the students complete more semesters of college. Also, we are expecting that within certain majors, particularly those that require natural sciences and mathematics, there may be a stronger relationship between core and GPA. In the statewide model, other variables that made a statistically significant contribution to explaining the total variance were: (1) ACT composite score (2) whether or not a student felt that they would need help with their study skills in college, (3) the number of counseling services that they felt that they would require in college, (4) the highest educational level that they anticipated that they would complete, (5) whether or not they felt that they would need vocational counseling, (6) and their perceived need for help with their reading skills.

## Second Year Methodology and Results

The first of the two tapes that will be sent from each of the public colleges and universities for the 1987 academic year has been received and processed. From these tapes will be generated a series of reports that describe the current status of those students in the first year cohort. Information in the reports will include the Fall 87 location of the students that were in the Fall 86 cohort and the regional location of the high schools from which they graduated. Each report shows the Fall 86 GPA, the average ACT scores, and whether or not the students took a core curriculum.

Statewide statistical data have also been generated from the first set of tapes, and are centered around information regarding the second year enrollment status of the students. Thus, the data allow us to look at persistence, which is defined as still being enrolled in any public college or university in Missouri in the second year. We were also able to categorize the persisting students by Fall 1986 GPA, which gives us the ability to look at those students that persisted and had a GPA of 2.00 or more and those that persisted and had a GPA of less than 2.00. We also generated data on those students that are no longer enrolled in a public institution, and again categorized these students by GPA.

When considering second year enrollment in a public institution irrespective of college GPA, the regression model was able to explain less than 10% of the total variance. The variable that explained the most variance was the ACT Composite test score, followed by high school GPA. While no other variables explained as much as 0.5% of the total variance, the type of high school from which a student graduated contributed to the total variance at better than the .05 level of significance. As with the Fall 86 semester GPA, whether or not a

student took a core curriculum had very little predictive capability for second year enrollment.

When college GPA was taken into account, it was found that the high school characteristic variables were even poorer predictors for persistence. For those students with Fall 86 GPA's of 2.00 or more, the best predictor, the ACT composite test score, explained approximately one percent of the total variance. With fourteen variables included, the regression model was able to explain less than two percent of the total variance. This means that high school characteristics, including academic proficiency and preparation, have almost no predictive capability for those students that maintain an acceptable grade point average but either drop out or do not enroll in a public institution in Missouri.

Also, as with the results for student success, whether or not a student took a core curriculum had little predictive value for determining persistence. Combined with the fact that we were able to account for only a small percentage of the total variance, it is clear that factors other than high school related characteristics are playing a major role in whether or not a student enrolls in the second year of college, at least when considering the public colleges and universities.

## Methodological Problems and Considerations

In addition to the standard problems of collecting and extracting a common data base from a large group of institutions with a wide range of data processing capabilities, there are also a number of caveats in the design of the study itself. First of all, we must continually remind ourselves when using the data for policy decisions, even though the study is based upon a large sample of 15,000 students, it is still a sample. By design, the study eliminates those students that do not attend college; therefore, it is inappropriate to make generalizations to the total high school population. Also, those students that attend institutions outside the state or independent institutions within the state are not included in the sample. If one assumes that a large proportion of these students are better prepared academically than the average student entering college in the state, then their elimination should bias downward the means of the variables which measure high school academic achievement.

Also, only traditional college age students, i.e., those between the ages of eighteen and twenty-one that attend college right out of high school, are considered in the study. This is of particular import when attempting to reach conclusions about the community colleges, which now have a high proportion of non-traditional students.

In addition, once those students originally in the study leave the public college and university system, they are no longer part of the sample. While we are looking into ways of capturing those students that 'stopout' of the system, i.e., leave and then return, we have not yet done so.

We also have made the assumption that college GPA is an adequate proxy for success in college. While it reflects a very important part of the total college experience, it is by no means the only, or perhaps even the best, measure of college success. However, given the quantitative nature of the study and the number of variables collected, it is currently the best that we have available. Even given that college GPA is an adequate proxy, in the first year of the study we collected the GPAs only for the Fall semester. This may not be a stable enough indicator to make more than tentative conclusions regarding college success.

Finally, and most importantly, we have collected only a limited number of variables from the colleges and universities. Given the fact that we have been able to explain less than 30% of the total variance within college GPA, and given the fact that we have reviewed and analyzed much of the high school characteristic data available from ACT, it is appropriate to conclude that many other factors, including institutional 'fit', and other factors that enter in to the picture once a student enters college, contribute heavily to college success and persistence.

## Conclusions

We anticipate that some of the methodological problems of the study will be resolved as we move into the second year. We intend to collect data for the full year rather than one semester. We will also have some additional indicators, such as whether or not a student is full- or part-time, and whether or not a student received a 0.00 GPA because of withdrawing from college. However, some limitations, such as the fact that we are dealing with a sample rather than the entire population of college-bound students, will be with us through the duration of the study.

These limitations notwithstanding, we are confident that the Student Achievement Study will prove to be a powerful yet cost-effective means of relating high school characteristics to college performance and persistence. At the state coordination level, it provides state officials with a wide range of information on the student population that previously was not available. Such information provides a better foundation upon which to build effective policies.

The study is beneficial to the state public colleges and universities as a developmental tool, giving each institution the ability to see how their students are performing in college over time. It is beneficial to the high schools as a guidance and counseling tool, giving the high school counselors the ability to see how their students are performing at various colleges, as well as providing information on the effectiveness of their college preparatory curriculum.

Perhaps most importantly, the Student Achievement Study provides a set of data that can serve as a bridge for communication among each of these players in the process of providing quality education to the students of our state. If such communication results in an improvement in the education provided, then, even if none of the other benefits were present, the effort is more than worthwhile.

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# APPENDIX

## Selected Reports
## Generated by the
## Missouri Student Achievement Study

Table 1

Summary Statistics for 1986-87 ACT-Tested Freshmen Who Graduated from High School in Spring 1986

West State University *
Everywhere IA

Code: 9999

| Secondary School | N Your Sch | Avg ACT Comp | Average HSA and College GPA by ACT Composite Score Ranges: 1-15 N | 1-15 Avg HSA | 1-15 N | 1-15 Avg CGPA | 16-20 N | 16-20 Avg HSA | 16-20 N | 16-20 Avg CGPA | 21-25 N | 21-25 Avg HSA | 21-25 N | 21-25 Avg CGPA | 26-35 N | 26-35 Avg HSA | 26-35 N | 26-35 Avg CGPA |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Nashville HS | 3 | 9.7 | 3 | 2.3 | 3 | 2.4 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Normal HS | 1 | 18.0 | 0 | 0.0 | 0 | 0.0 | 1 | 3.5 | 1 | 3.3 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Norwich Comm HS | 25 | 17.3 | 10 | 2.6 | 9 | 2.3 | 8 | 3.1 | 8 | 2.6 | 6 | 3.3 | 4 | 3.1 | 1 | 4.0 | 1 | 3.4 |
| Oakland HS | 1 | 14.0 | 1 | 3.0 | 1 | 2.5 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Overland Consolidated HS | 2 | 19.0 | 1 | 2.3. | 1 | 1.5 | 0 | 0.0 | 0 | 0.0 | 1 | 2.8 | 1 | 3.2 | 0 | 0.0 | 0 | 0.0 |
| Ostandville HS | 3 | 21.3 | 0 | 0.0 | 0 | 0.0 | 1 | 3.5 | 1 | 1.3 | 2 | 3.6 | 2 | 2.9 | 0 | 0.0 | 0 | 0.0 |
| Page HS | 2 | 12.0 | 2 | 3.3 | 2 | 2.3 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Parker HS | 3 | 14.0 | 2 | 2.5 | 2 | 2.0 | 1 | 4.0 | 1 | 3.6 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Prather Bluff HS | 1 | 21.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 1 | 4.0 | 1 | 3.2 | 0 | 0.0 | 0 | 0.0 |
| Ramsay HS | 4 | 17.8 | 1 | 2.0 | 0 | 0.0 | 2 | 2.1 | 1 | 1.4 | 1 | 3.0 | 1 | 2.6 | 0 | 0.0 | 0 | 0.0 |
| Reynolds Consolidated HS | 1 | 15.0 | 1 | 3.3 | 1 | 1.6 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Robison Sr HS | 7 | 17.6 | 1 | 2.3 | 1 | 1.1 | 5 | 3.4 | 5 | 1.9 | 0 | 0.0 | 0 | 0.0 | 1 | 4.0 | 1 | 3.6 |
| Steel City HS | 3 | 20.3 | 0 | 0.0 | 0 | 0.0 | 2 | 3.8 | 2 | 2.6 | 1 | 3.0 | 1 | 2.5 | 0 | 0.0 | 0 | 0.0 |
| Stone City HS | 2 | 14.5 | 2 | 3.5 | 2 | 2.7 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Sullivan HS | 1 | 20.0 | 0 | 0.0 | 0 | 0.0 | 1 | 3.5 | 1 | 3.6 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Turner HS | 2 | 20.5 | 0 | 0.0 | 0 | 0.0 | 1 | 3.7 | 1 | 2.3 | 1 | 3.3 | 1 | 2.8 | 0 | 0.0 | 0 | 0.0 |
| White-Thomas HS | 1 | 9.0 | 0 | 0.0 | 1 | 1.8 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Wilson HS | 1 | 10.0 | 1 | 1.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Yorkville HS | 2 | 20.0 | 1 | 3.0 | 1 | 2.3 | 0 | 0.0 | 0 | 0.0 | 1 | 3.5 | 1 | 3.8 | 0 | 0.0 | 0 | 0.0 |
| Youngstown HS | 3 | 15.7 | 1 | 3.3 | 1 | 0.8 | 2 | 3.6 | 2 | 2.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| All pub U.S. IA | 344 | 17.2 | 124 | 2.6 | 117 | 2.0 | 106 | 3.0 | 112 | 2.3 | 67 | 3.2 | 66 | 2.8 | 20 | 3.4 | 20 | 3.0 |
| All priv. U.S. IA | 27 | 17.2 | 10 | 2.5 | 8 | 2.3 | 11 | 2.7 | 10 | 2.6 | 6 | 3.3 | 5 | 3.1 | 0 | 0.0 | 0 | 0.0 |
| All out-of-state U.S. | 26 | 17.5 | 6 | 2.6 | 10 | 1.8 | 9 | 3.1 | 9 | 2.4 | 7 | 2.9 | 7 | 2.7 | 0 | 0.0 | 0 | 0.0 |
| All unspecified U.S. | 99 | 14.8 | 49 | 2.2 | 51 | 2.3 | 23 | 2.6 | 24 | 2.7 | 8 | 2.8 | 11 | 3.5 | 1 | 2.5 | 1 | 3.6 |
| Totals | 496 | 16.7 | 189 | 2.5 | 186 | 2.1 | 149 | 3.0 | 155 | 2.4 | 88 | 3.2 | 89 | 2.9 | 21 | 3.3 | 21 | 3.0 |

*00 College GPAs have been deleted

Table 2

Summary Statistics for 1986-87 ACT Tested Freshmen
Who Graduated From High Schools in Spring 1986
(By College Core Course Preparation*)

West State University **
Everywhere IA

Code: 9999

| Secondary School | Students With Core* Courses | | | | Students Without Core Courses | | | |
|---|---|---|---|---|---|---|---|---|
| | N Your School | Avg ACT Comp | Avg HSA | Avg CGPA | N Your School | Avg ACT Comp | Avg HSA | Avg CGPA |
| Nashville HS | 0 | 0.0 | 0.0 | 0.0 | 3 | 9.7 | 2.3 | 2.4 |
| Normal HS | 0 | 0.0 | 0.0 | 0.0 | 1 | 18.0 | 3.5 | 3.3 |
| Norwich Comm HS | 1 | 13.0 | 3.3 | 1.9 | 24 | 17.5 | 3.0 | 2.7 |
| Oakland HS | 0 | 0.0 | 0.0 | 0.0 | 1 | 14.0 | 3.0 | 2.5 |
| Overland Consolidated HS | 0 | 0.0 | 0.0 | 0.0 | 2 | 19.0 | 2.5 | 2.3 |
| Ostandville HS | 0 | 0.0 | 0.0 | 0.0 | 3 | 21.3 | 3.6 | 2.4 |
| Page HS | 0 | 0.0 | 0.0 | 0.0 | 2 | 12.0 | 3.3 | 2.3 |
| Parker HS | 0 | 0.0 | 0.0 | 0.0 | 3 | 14.0 | 3.0 | 2.5 |
| Prather Bluff HS | 0 | 0.0 | 0.0 | 0.0 | 1 | 23.0 | 4.0 | 3.2 |
| Ramsay HS | 1 | 18.0 | 2.3 | 0.0 | 3 | 17.7 | 2.3 | 2.0 |
| Reynolds Consolidated HS | 0 | 0.0 | 0.0 | 0.0 | 1 | 15.0 | 3.3 | 1.6 |
| Robison Sr HS | 0 | 0.0 | 0.0 | 0.0 | 7 | 17.6 | 3.3 | 2.1 |
| Steel City HS | 0 | 0.0 | 0.0 | 0.0 | 3 | 20.3 | 3.5 | 2.6 |
| Stone City HS | 0 | 0.0 | 0.0 | 0.0 | 2 | 14.5 | 3.5 | 2.7 |
| Sullivan HS | 0 | 0.0 | 0.0 | 0.0 | 1 | 20.0 | 3.5 | 3.6 |
| Turner HS | 0 | 0.0 | 0.0 | 0.0 | 2 | 20.5 | 3.5 | 2.5 |
| White-Thomas HS | 0 | 0.0 | 0.0 | 0.0 | 1 | 9.0 | 0.0 | 1.8 |
| Wilson HS | 0 | 0.0 | 0.0 | 0.0 | 1 | 10.0 | 1.0 | 0.0 |
| Yorkville HS | 0 | 0.0 | 0.0 | 0.0 | 2 | 20.0 | 3.3 | 3.0 |
| Youngstown HS | 0 | 0.0 | 0.0 | 0.0 | 3 | 15.7 | 3.5 | 1.6 |
| All pub U.S. IA | 15 | 21.1 | 2.9 | 2.8 | 329 | 17.0 | 2.9 | 2.3 |
| All priv. U.S. IA | 9 | 18.4 | 3.0 | 2.7 | 18 | 16.6 | 2.7 | 2.5 |
| All out-of-state U.S. | 1 | 13.0 | 3.0 | 3.3 | 25 | 17.7 | 2.9 | 2.2 |
| All unspecified U.S. | 0 | 0.0 | 0.0 | 0.0 | 99 | 14.8 | 2.4 | 2.6 |
| Totals | 25 | 19.8 | 2.9 | 2.8 | 471 | 16.6 | 2.8 | 2.4 |

*College Core Course preparation means the student had taken in high school 4 years of English, 3 years of mathematics, 3 years of social studies, 2 years of natural science, 2 years of foreign language.

**00 College GPAs have been deleted

## Table 3

### Summary Statistics for 1986-87 ACT-Tested Freshmen Who Enrolled in Different Educational Majors

West State University *
Everywhere IA

**Code: 9999**

| Educational Major | N | Avg ACT Comp | Average HSA and College GPA by ACT Composite Score Ranges | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 1-15 | | | | 16-20 | | | | 21-25 | | | | 26-35 | | | |
| | | | N | Avg HSA | N | Avg CGPA | N | Avg HSA | N | Avg CGPA | N | Avg HSA | N | Avg CGPA | N | Avg HSA | N | Avg CGPA |
| 02-Agricultural Sciences | 7 | 17.1 | 1 | 2.0 | 1 | 2.7 | 5 | 2.8 | 5 | 1.9 | 1 | 3.0 | 1 | 1.4 | 0 | 0.0 | 0 | 0.0 |
| 06-Business & Management | 104 | 17.2 | 29 | 2.4 | 29 | 2.2 | 42 | 3.0 | 44 | 2.3 | 16 | 3.2 | 16 | 3.0 | 4 | 3.5 | 4 | 3.0 |
| 07-Business & Office | 21 | 15.2 | 10 | 2.8 | 12 | 2.4 | 6 | 2.9 | 6 | 2.2 | 2 | 3.3 | 3 | 3.5 | 0 | 0.0 | 0 | 0.0 |
| 11-Computer & Info Sci | 17 | 17.7 | 7 | 2.8 | 7 | 2.2 | 3 | 3.1 | 3 | 2.9 | 5 | 3.0 | 5 | 2.5 | 1 | 2.5 | 1 | 3.6 |
| 13-Education | 50 | 16.3 | 20 | 2.5 | 21 | 2.1 | 16 | 3.1 | 19 | 2.6 | 7 | 3.3 | 8 | 3.1 | 0 | 0.0 | 1 | 2.0 |
| 15-Engineering Tech | 29 | 18.4 | 9 | 2.3 | 10 | 1.8 | 7 | 2.6 | 6 | 2.2 | 7 | 3.3 | 7 | 2.6 | 5 | 3.7 | 4 | 2.7 |
| 17-Allied Health | 1 | 22.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 1 | 3.8 | 1 | 3.6 | 0 | 0.0 | 0 | 0.0 |
| 18-Health Sciences | 21 | 14.2 | 11 | 2.4 | 9 | 1.9 | 6 | 2.6 | 4 | 2.3 | 2 | 3.6 | 2 | 3.3 | 0 | 0.0 | 0 | 0.0 |
| 22-Law | 5 | 16.2 | 2 | 2.0 | 2 | 2.6 | 2 | 3.3 | 1 | 3.6 | 1 | 4.0 | 1 | 3.2 | 0 | 0.0 | 0 | 0.0 |
| 23-Letters | 8 | 19.4 | 0 | 0.0 | 0 | 0.0 | 6 | 2.7 | 4 | 2.5 | 2 | 3.3 | 2 | 2.9 | 0 | 0.0 | 0 | 0.0 |
| 26-Life Sciences | 12 | 16.4 | 5 | 2.4 | 5 | 2.2 | 2 | 3.0 | 3 | 2.4 | 3 | 3.0 | 2 | 2.5 | 1 | 4.0 | 1 | 3.8 |
| 27-Mathematics | 5 | 21.2 | 0 | 0.0 | 0 | 0.0 | 3 | 2.6 | 3 | 2.3 | 1 | 3.5 | 0 | 0.0 | 1 | 3.0 | 1 | 3.6 |
| 40-Physical Sciences | 13 | 18.5 | 3 | 2.3 | 2 | 2.0 | 3 | 3.7 | 5 | 2.4 | 4 | 3.1 | 4 | 2.7 | 1 | 3.5 | 1 | 2.9 |
| 42-Psychology | 15 | 15.3 | 7 | 2.4 | 8 | 1.8 | 3 | 2.7 | 3 | 2.2 | 2 | 2.9 | 2 | 4.0 | 1 | 2.0 | 1 | 2.4 |
| 43-Protective Services | 23 | 15.5 | 10 | 2.5 | 12 | 2.1 | 2 | 3.0 | 3 | 3.1 | 4 | 2.6 | 4 | 2.6 | 2 | 3.0 | 2 | 2.7 |
| 44-Public Affairs | 2 | 18.0 | 1 | 2.8 | 1 | 3.3 | 0 | 0.0 | 0 | 0.0 | 1 | 3.0 | 1 | 3.3 | 0 | 0.0 | 0 | 0.0 |
| 45-Social Sciences | 11 | 14.2 | 6 | 2.6 | 7 | 2.3 | 4 | 3.1 | 3 | 2.6 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| 50-Visual & Perf Arts | 29 | 16.0 | 15 | 2.3 | 12 | 2.4 | 9 | 3.0 | 10 | 2.3 | 2 | 2.9 | 4 | 2.9 | 0 | 0.0 | 0 | 0.0 |
| 99-Undeclared | 123 | 16.9 | 53 | 2.5 | 48 | 2.0 | 30 | 3.0 | 33 | 2.3 | 27 | 3.2 | 26 | 2.9 | 5 | 3.3 | 5 | 3.4 |
| Totals | 496 | 16.7 | 189 | 2.5 | 186 | 2.1 | 149 | 3.0 | 155 | 2.4 | 88 | 3.2 | 89 | 2.9 | 21 | 3.3 | 21 | 3.0 |

Table 4

Summary Statistics for 1986-87 ACT Tested Freshmen
Who Enrolled in Different Educational Majors
(By College Core Course Preparation*)

West State University •
Everywhere IA

Code: 9999

| Educational Major | Students With Core* Courses | | | | Students Without Core Courses | | | |
|---|---|---|---|---|---|---|---|---|
| | N | Avg ACT Comp | Avg HSA | Avg CGPA | N | Avg ACT Comp | Avg HSA | Avg CGPA |
| 02-Agricultural Sciences | 0 | 0.0 | 0.0 | 0.0 | 7 | 17.1 | 2.7 | 1.9 |
| 06-Business & Management | 8 | 17.6 | 2.8 | 2.6 | 96 | 17.1 | 2.9 | 2.4 |
| 07-Business & Office | 0 | 0.0 | 0.0 | 0.0 | 21 | 15.2 | 2.9 | 2.5 |
| 11-Computer & Info Sci | 0 | 0.0 | 0.0 | 0.0 | 17 | 17.7 | 2.9 | 2.5 |
| 13-Education | 1 | 12.0 | 2.7 | 2.3 | 49 | 16.4 | 2.8 | 2.4 |
| 15-Engineering Tech | 0 | 0.0 | 0.0 | 0.0 | 29 | 18.4 | 2.9 | 2.2 |
| 17-Allied Health | 1 | 22.0 | 3.8 | 3.6 | 0 | 0.0 | 0.0 | 0.0 |
| 18-Health Sciences | 2 | 16.5 | 2.6 | 2.1 | 19 | 14.0 | 2.6 | 2.2 |
| 22-Law | 0 | 0.0 | 0.0 | 0.0 | 5 | 16.2 | 2.9 | 3.0 |
| 23-Letters | 1 | 25.0 | 4.0 | 3.6 | 7 | 18.6 | 2.7 | 2.4 |
| 26-Life Sciences | 0 | 0.0 | 0.0 | 0.0 | 12 | 16.4 | 2.8 | 2.5 |
| 27-Mathematics | 0 | 0.0 | 0.0 | 0.0 | 5 | 21.2 | 2.9 | 2.6 |
| 40-Physical Sciences | 1 | 21.0 | 3.8 | 3.7 | 12 | 18.3 | 3.0 | 2.3 |
| 42-Psychology | 1 | 30.0 | 2.0 | 2.4 | 14 | 14.2 | 2.6 | 2.3 |
| 43-Protective Services | 2 | 23.5 | 3.3 | 3.1 | 21 | 14.8 | 2.6 | 2.3 |
| 44-Public Affairs | 0 | 0.0 | 0.0 | 0.0 | 2 | 18.0 | 2.9 | 3.3 |
| 45-Social Sciences | 0 | 0.0 | 0.0 | 0.0 | 11 | 14.2 | 2.8 | 2.4 |
| 50-Visual & Perf Arts | 1 | 13.0 | 1.0 | 1.3 | 28 | 16.1 | 2.6 | 2.4 |
| 99-Undeclared | 7 | 21.7 | 2.8 | 2.8 | 116 | 16.6 | 2.8 | 2.3 |
| Totals | 25 | 19.8 | 2.9 | 2.8 | 471 | 16.6 | 2.8 | 2.4 |

*College Core Course preparation means the student had taken in high school 4 years of English, 3 years of mathematics, 3 years of social studies, 2 years of natural science, 2 years of foreign language.

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Table 1

Summary Profile for 1986 ACT-Tested Graduates From Your
High School Who Attended Public Colleges in Missouri

Alpha High School
Anytown Missouri

Code: 260099

| College/University | % College Fresh. With ACT Scores | N Your School | Avg ACT Comp | Average HSA and College GPA by ACT Composite Score Ranges | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 1-15 | | | | 16-20 | | | | 21-25 | | | | 26-35 | | | |
| | | | | N | Avg HSA | N | Avg CGPA | N | Avg HSA | N | Avg CGPA | N | Avg HSA | N | Avg CGPA | N | Avg HSA | N | Avg CGPA |
| Adam University | 65 | 55 | 18.6 | 10 | 2.4 | 9 | 2.0 | 18 | 2.6 | 17 | 2.3 | 14 | 2.9 | 14 | 2.7 | 13 | 3.3 | 13 | 2.9 |
| Beta College | 82 | 22 | 17.5 | 10 | 2.1 | 9 | 2.1 | 5 | 2.7 | 5 | 2.4 | 5 | 3.0 | 5 | 2.6 | 2 | 3.5 | 2 | 3.3 |
| Gamma College | 50 | 26 | 23.4 | 5 | 2.0 | 4 | 2.1 | 8 | 2.5 | 8 | 2.6 | 4 | 3.1 | 5 | 2.8 | 9 | 3.4 | 9 | 3.1 |
| . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| Zeta University | 70 | 13 | 18.0 | 3 | 2.1 | 3 | 2.0 | 4 | 2.6 | 4 | 2.4 | 5 | 3.0 | 5 | 2.9 | 1 | 3.0 | 1 | 2.6 |
| Totals (All Colleges) | 67 | 135 | 19.9 | 35 | 2.3 | 34 | 2.0 | 60 | 2.5 | 59 | 2.3 | 22 | 2.9 | 22 | 2.7 | 18 | 3.3 | 18 | 3.0 |

[A]Summary data is reported only for colleges to which four or more of your graduates attended in Fall 1986

Table 2

Summary Profile for 1986 ACT-Tested Graduates From Your High School Who Attended Public Colleges in Missouri (By College Core Course Preparation*)

Alpha High School
Anytown Missouri

Code: 260099

| College/University | % College Freshmen With ACT | Students With Core* Courses | | | | Students Without Core Courses | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | N Your School | Avg ACT Comp | Avg HSA | Avg CGPA | N Your School | Avg ACT Comp | Avg HSA | Avg CGPA |
| Adam University | 65 | 35 | 19.3 | 3.2 | 2.7 | 20 | 17.2 | 2.5 | 2.3 |
| Beta College | 82 | 15 | 18.0 | 3.1 | 2.9 | 7 | 14.5 | 2.7 | 2.5 |
| Gamma College | 50 | 18 | 25.2 | 3.3 | 3.0 | 8 | 19.2 | 2.8 | 2.6 |
| . | . | . | . | . | . | . | . | . | . |
| . | . | . | . | . | . | . | . | . | . |
| . | . | . | . | . | . | . | . | . | . |
| Zeta University | 70 | 7 | 19.8 | 2.9 | 2.9 | 6 | 18.6 | 2.8 | 2.4 |
| Totals | 67 | 90 | 22.4 | 3.1 | 2.8 | 45 | 18.7 | 2.7 | 2.6 |

*College Core Course preparation means the student had taken in high school 4 years of English, 3 years of mathematics, 3 years of social studies, 2 years of natural science, 2 years of foreign language.